Table 3.
Implicit Costs per Life Saved of Selected Regulations

Regulation	Year Issued	Agency	Cost per Premature Death Averted (Millions of 1990 dollars)
Unvented Space Heater Ban	1980	CPSC	0.1
Trihalomethane Drinking Water Standards	1979	EPA	0.2
Aircraft Floor Emergency Lighting Standard	1984	FAA	0.6
Auto Side Door Support Standards	1970	NHTSA	0.8
Hazard Communication Standard	1983	OSHA	1.6
Standards for Radionuclides in Uranium Mines	1984	EPA	3.4
Benzene Occupational Exposure Limit	1987	OSHA	8.9
Hazardous Waste Listing for Petroleum Refining Sludge	1990	EPA	27.6
Coke Ovens Occupational Exposure Limit	1976	OSHA	63.5
Diethylstilbestrol (DES) Cattlefeed Ban	1979	FDA	124.8
Hazardous Waste Land Disposal Ban	1988	EPA	4,190.4
Hazardous Waste Listing for Wood-Preserving Chemicals	1990	EPA	5,700,000.0

SOURCE: Congressional Budget Office using data from *Budget of the United States Government: Fiscal Year 1992*, Part Two, p. 370, Table C-2. Cost estimates were based on John F. Morrall III, "A Review of the Record," *Regulation*, vol. 10, no. 2 (1986), p. 30.

NOTES: CPSC = Consumer Product Safety Commission; EPA = Environmental Protection Agency; FAA = Federal Aviation Administration; NHTSA = National Highway Traffic Safety Administration; OSHA = Occupational Safety and Health Administration; FDA = Food and Drug Administration.

Example of EPA's Use of Benefit-Cost Analysis

Some of these issues are illustrated in an analysis of a proposed EPA regulation concerning facilities at which wastes are treated, stored, and disposed of (see Box 2). The analysis, called a regulatory impact analysis, identifies the benefits and costs of a proposed rule governing corrective actions at facilities regulated under the Resource Conservation and Recovery Act.[29] The analysis is intended to provide a framework for evaluating the costs and benefits of alternative policy approaches to environmental cleanup at RCRA sites. It points up deficiencies in information about costs and benefits, and it identifies trade-offs facing policymakers.

Although the regulatory impact analysis did not cover the largest DOE facilities, it provides an example of the type of analysis that would be useful in understanding the policy choices and trade-offs at

29. Environmental Protection Agency, Office of Solid Waste, *Draft Regulatory Impact Analysis for the Final Rulemaking on Corrective Action for Solid Waste Management Units: Proposed Methodology for Analysis* (March 1993).

the nuclear weapons complex. As DOE completes assessments of contaminated sites, a better picture of risks and potential risk reductions will appear and will facilitate comprehensive analysis of alternative environmental cleanup activities. As indicated in Chapter 2, DOE is working on improving its ability to estimate costs, although additional information and refinements are needed there as well.

Deciding When to Clean Up

Benefit-cost analysis can help guide policy decisions about both the timing and the extent of cleanup. For each site requiring remediation, DOE will have to decide whether to clean it up immediately, delay cleanup temporarily, or postpone cleanup indefinitely.[30] In each case, DOE must consider several factors: the cost; the reduction in risk to workers, the public, and the environment; and alternative uses of land and facilities that are currently not available to the public.

In terms of reducing risks and restoring land and facilities to alternative uses, immediate remediation would generally produce the greatest benefit. This benefit must be weighed not only against the cost, however, but also against risks--primarily to workers--associated with cleanup and disposal.

Benefits and Costs of Delayed Remediation and Permanent Isolation

Delaying cleanup can reduce the risk of exposure caused by accidental release of radioactive contaminants to cleanup workers, the general public, and the environment by allowing time for the natural decay of radioactive material. For instance, tritium --a common contaminant at DOE installations--decays at the rate of 50 percent every 12 years. Thus, 24 years from now, 75 percent of the contaminating tritium will have decayed to a harmless form of helium; after 36 years, 87 percent will have decayed. Other types of radionuclides decay fairly quickly also and, although not as widespread as tritium, would, at current concentrations, present significant hazards to workers involved in the cleanup. Cobalt 60 and cesium 137, commonly found in reactor cores, are examples of such substances.

Delaying cleanup can also provide time for safer and more effective cleanup technologies to be developed. In addition, cleanup projects that are not affordable in the near term could become so in the future if additional funds become available or if cost-saving technologies are developed.

Delaying remediation has disadvantages, however, especially if it increases the potential for exposing the public to contaminants. Such exposure is particularly likely if the contaminants cannot be completely contained. Delaying cleanup would also require continued limits on the use of contaminated lands or facilities.

Permanently isolating a site, especially one that is particularly difficult to clean up, is a viable option given the remote location of many of DOE's installations. Because of the secrecy of the Manhattan Project, for example, the original sites selected in the 1940s were chosen specifically because they were far away from population centers. Furthermore, to enhance the security of operations, many of the sites on which DOE facilities were built were very large, thereby making it difficult for outsiders to observe them. The same characteristics make it easy to isolate the contaminated sites.

Permanently isolating some sites may be consistent with storage requirements for nuclear waste. For the foreseeable future, the nation will need a location in which to store radioactive materials discarded from its military endeavors. Some of these wastes, though not necessarily highly radioactive, may be rather bulky. Examples of such wastes include discarded housings of nuclear reactors from decommissioned submarines and the sections of submarine hulls that surrounded the reactors. These slightly radioactive components are being stored at Hanford. They probably present little immediate danger to the environment since their low level of contamination is unlikely to spread. Ensuring that

30. Indefinitely postponing remediation need not be construed as license for further contamination of a site. Rather, it could entail storage at an acceptable level of risk, leaving open the option of cleanup if new technologies and less constrained budgets permit.

Box 2.
EPA's Analysis of Hazardous Waste Cleanup

The Environmental Protection Agency (EPA) has recently published a regulatory impact analysis (RIA) that attempts to identify and estimate the benefits and costs of a proposed rule governing corrective actions at facilities regulated under the Resource Conservation and Recovery Act (RCRA).[1] The analysis is intended to provide a framework for evaluating the costs and benefits of alternative policy approaches to environmental cleanup at RCRA sites.

EPA's analysis is useful and relevant to the debate about the Department of Energy's (DOE's) cleanup program. Although it does not estimate the costs and benefits (risk reductions) of complying with the proposed regulation at the most problematic DOE facilities, it sheds light on the kinds of benefits, the magnitudes of costs, and other implications of the proposed rule.[2] Perhaps the most important lessons to be drawn from the RIA are the difficulties of determining costs and benefits and the uncertainties about the estimates.

The analysis estimates the total discounted cost of corrective actions at the sample facilities to be $18.7 billion. These costs occur over a long period; the estimated median time to remediate contaminated groundwater is 115 years for on-site plumes and 90 years for off-site plumes.[3] Most of the costs are associated with removing and treating contaminated soil and groundwater.

The RIA assesses both health and ecological benefits. The expected health benefits over the 128-year modeling period include averting 400 to 13,300 cancer cases and 100 to 12 million cases in which thresholds for noncancer health effects are exceeded. (EPA did not discount the benefits although it did discount the costs.) In addition to unquantified ecological effects, benefits include cleanup of 1.4 million acres contaminated by groundwater and 18 million cubic yards of soil. The large range of cancers averted and the much larger range of noncancer health benefits reflect the difficulties of assessing health risks. By the same token, these ranges suggest that devoting more resources to understanding and evaluating health benefits could produce a large payoff in helping to formulate cleanup priorities.

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1. Environmental Protection Agency, Office of Solid Waste, *Draft Regulatory Impact Analysis for the Final Rulemaking on Corrective Action for Solid Waste Management Units: Proposed Methodology for Analysis* (March 1993). The discussion here is not intended to be a comprehensive critique of EPA's analysis, nor an endorsement of its methodology or findings. Rather, it illustrates the type of analysis that can help inform policy decisions and the strengths and shortcomings of the current state of knowledge and estimating techniques.

2. The sample consisted of 359 federal facilities and 5,432 nonfederal facilities. But the RIA excluded seven of the largest DOE facilities--Hanford, Savannah River, Rocky Flats, Idaho National Engineering Laboratory, Fernald, Los Alamos National Laboratory, and the Nevada Test Site. It also excluded two large Department of Defense facilities--Rocky Mountain Arsenal and McClellan Air Force Base. Some parts of DOE's cleanup program fall under the proposed rule, but other parts come under the jurisdiction of the Comprehensive Environmental Response, Compensation, and Liability Act. Most of the same considerations apply, however, regardless of which statute governs.

3. In the context of environmental cleanup, a plume is groundwater contaminated by flowing through a hazardous substance.

the contaminants at such sites are contained may be preferable to attempting to remove and treat them.

Deciding against restoring a particular site also has other advantages. It would probably minimize risks to workers since exposure to contaminants could be limited. In addition, it would avoid the cost of remediation, although those savings would have to be weighed against the costs of maintaining safety and security at the site.

In addition to the cost of safeguarding and monitoring a site, forgoing remediation would have other drawbacks. The potential for accidentally exposing people and the environment to the contaminants would remain. In addition, it would permanently preclude other uses of the land and facilities.

The Surplus Reactors at Hanford: An Example of the Choices Facing DOE

The trade-offs involved in deciding which cleanup actions to undertake and when to do so are illustrated in DOE's analysis of decommissioning eight surplus reactors at Hanford. DOE examined several

The problem can be illustrated by considering the implications of the estimates. Focusing on health benefits, suppose first that the low end of the ranges turns out to be correct. If all cancer or noncancer health effects result in premature deaths, premature deaths would total 500. At a cost of $18.7 billion, the cost per life saved would come to $37.4 million.[4] If instead the midpoints of the ranges were correct, then the cost per life saved would be just over $3,000. The latter would be quite a bargain; however, the former would not be such a good deal when compared with other risk-reducing expenditures (see Table 3, but note that its estimates are lower because it discounted future benefits whereas the RIA did not).

These results leave policymakers little basis for understanding whether the proposed rule would make wise use of environmental cleanup dollars, but the RIA offers a modest amount of additional information. For example, it indicates that many of the potential benefits are concentrated at a relatively small number of facilities. Focusing on those facilities might be a way to make a large problem more tractable.

The RIA suggests another intriguing option. Noting that the primary benefits of the proposed rule involve reducing contamination in drinking water, the RIA indicates that the health effects of the hazardous waste sites in the sample could be mitigated largely by treating water that was destined for use by humans (for drinking, washing, and so on) or by providing water from alternative sources rather than by rooting out all contamination at the source. Ensuring the safety of water to be used by humans would cost only $4.8 million, according to the RIA.

4. This estimate is calculated as if all the benefits occur immediately. In reality, it would be many years before corrective actions would avert premature deaths. The estimate also ignores potential ecological benefits.

As far as protecting human health is concerned, then, the choice would appear to be between spending $4.8 million and spending $18.7 billion. Moreover, providing clean water from alternative sources could probably be achieved much more quickly than cleaning up contaminated groundwater, thereby giving health protection sooner. Each choice would provide essentially the same reduction in risk to human health. The difference is that the $18.7 billion would also buy clean groundwater and soil--or at least an attempt at cleanliness. As the RIA notes, some substances in the groundwater cannot be fully cleaned up using existing technologies: pumping and treating is relatively ineffective in removing dense nonaqueous-phase liquids, for example. If those are the choices, then adopting the more expensive approach would imply placing a very high value on nonhealth benefits.[5]

To summarize, the RIA proposes a methodology for evaluating benefits and costs associated with cleaning up hazardous wastes, identifies the kinds of benefits and costs, and provides some estimates of their magnitude. It suggests that knowing how contamination at hazardous waste sites is likely to affect people's health is essential to making sound decisions about remediation. And it points out that at least in some cases, there may be less expensive ways to reduce risks to human health than undertaking massive cleanup efforts. Such alternatives may meet only the objective of reducing risks to people; they may not meet the other objective of making sites available for other uses. The choice of objective is ultimately a political one, but it can be informed by knowledge of the trade-offs.

5. Choosing the option of providing clean water from alternative sources does not foreclose the option of cleaning up the contaminated groundwater. Using alternative sources could be considered an interim action, pending development of technology that would offer cheaper or more effective treatment of groundwater.

alternatives: immediate removal of the reactors to a disposal site, delayed removal, and permanent isolation with no remedial action.[31] As criteria for comparison, DOE considered the cost of each alternative over the next 100 years and the number of excess cancer deaths during the next 10,000 years caused by contaminants in the reactors.

31. Department of Energy, *Decommissioning of Eight Surplus Production Reactors at the Hanford Site, Richland, Washington*, Addendum (Final Environmental Impact Statement), DOE/EIS-0119F (December 1992). DOE considered dismantling the reactor cores as well as one-piece removal, but the latter is most relevant to the current discussion.

Immediate Remediation. DOE considered the option of immediately removing the reactor cores to their final resting place and dismantling the rest of the reactor buildings. DOE estimated that this action, which would take about 12 years for all eight reactors, would cost about $190 million (in 1990 dollars) and that the annual cost to monitor groundwater at the disposal site would be about $400,000. The total cost of this option over the next 100 years, therefore, would be about $230 million (see Table 4). DOE did not take account of the effects of time in its cost estimates, however. At a discount rate of 2 percent, the cost of immediate reme-

Table 4.
Costs and Cancer Fatalities Under Three Alternatives for Decommissioning Reactors at Hanford

Alternative	Cost Over 100 Years (Millions of dollars): In 1990 Dollars	Cost Over 100 Years (Millions of dollars): Discounted[a]	Occupational Dose (Person-rem)[b]	Cancer Fatalities: Occupational[c]	Cancer Fatalities: Population[d]
Immediate Remediation	230	180	159	0	1
Delayed Remediation	190	60	51	0	1
Permanent Isolation with No Remediation	40	20	24	0	20

SOURCE: Congressional Budget Office using data from Department of Energy, *Decommissioning of Eight Surplus Production Reactors at the Hanford Site, Richland, Washington*, Addendum (Final Environmental Impact Statement), DOE/EIS-0119F (December 1992).

NOTE: Remediation includes one-piece removal and disposal of reactor core.

a. Assumes a real annual rate of 2 percent.

b. rem = roentgen equivalent man, a measure of exposure to radiation.

c. Over a period of 100 years.

d. Over a period of 10,000 years.

diation would be $180 million over the next 100 years.[32]

DOE concluded that the public would not be exposed to radiation during the transportation of the reactor cores or dismantlement of the buildings. Nor would the workers be sufficiently exposed to cause cancer fatalities, according to DOE's analysis. Finally, the land on which the reactors are currently sited would be available for unrestricted use at the end of the 12-year remediation process.

Delayed Remediation. Another alternative DOE examined was to wait 75 years before removing the reactor cores from their present locations and transporting them to the disposal area. By allowing time for some of the radionuclides to decay, DOE estimates that this option would reduce the exposure of workers by more than two-thirds. Although DOE concluded that exposure rates would not result in any cancer-related deaths of workers even if remediation was undertaken immediately, it asserted that this delay would further reduce the risks.

DOE also determined that a 75-year delay in remediation would not increase risks to the public from the contaminants in the reactors. By continuing security and maintenance of the reactors, DOE is confident that those risks would not significantly increase.

Finally, the cost to DOE to remediate 75 years from now and provide security and maintenance of the reactors in the meantime would be less than the cost to remediate immediately, when the time value of money is considered. According to DOE, the cost to guard and maintain the eight facilities before remediation would be about $400,000 per year (in 1990 dollars). DOE estimates that remediation would cost about $190 million in 1990 dollars whether it takes place now or in 75 years. At a

32. At a discount rate of 4 percent, the cost would be $160 million; at the 7 percent discount rate favored by the Office of Management and Budget, the cost would be $140 million.

discount rate of 2 percent, however, the cost of this option would be $60 million--roughly one-third of the cost of immediate remediation.[33]

Postponing remediation for 75 years would have one major disadvantage: it would preclude for a significant period of time any alternative uses of the land on which the reactors are situated. The reactors are located on or near the banks of the Columbia River--a popular recreation area and prime agricultural land--and that land would be unavailable for public use for at least 75 years.

Permanent Isolation of the Reactors. DOE also evaluated the option of leaving the reactors, with their cores and associated other nuclear waste, in place permanently rather than removing them to a disposal site. Given that DOE estimated an annual cost of about $400,000 to guard and maintain the eight facilities, total undiscounted costs over the next 100 years would amount to approximately $40 million. At a discount rate of 2 percent, the cost of this approach would be about $20 million, significantly less than either immediate or delayed remediation.[34]

Some important disadvantages, however, are associated with this option. The first is the potential for increased exposure of the public to the reactors and their contents if the reactor buildings were ever allowed to deteriorate. DOE illustrates this risk by assuming that the reactors are abandoned after 100 years. Without routine maintenance, the reactor buildings would deteriorate, leading to the potential release of radionuclides to the environment and the potential exposure of humans to radioactivity and other safety hazards if people entered the site. As a consequence, DOE estimates that maintaining the reactors for 100 years and then abandoning them could result in 20 excess cancer fatalities over the next 10,000 years.[35]

The potential for exposure leading to fatalities exists even after 100 years because some of the radionuclides that are present in significant quantities will be radioactive for a very long time. Carbon 14, an element commonly found in nuclear reactors, has a half-life of 5,730 years. Thus, at the end of 100 years, almost 99 percent of the carbon 14 would remain. In addition, lesser amounts of even longer-lived radionuclides, such as uranium 238 and chlorine 36, would remain.

Finally, this option would preclude using the land or structures for any other purpose, such as recreation or agriculture. DOE did not include an estimate of the value people place on these uses, but it should be factored in to any decision about ultimate land use.

Choosing Among the Alternatives. Choosing one of these alternatives requires weighing the costs and benefits. The least costly alternative is permanent isolation with no remediation. The costs in discounted dollars at a rate of 2 percent would be equal to $180 million, $60 million, and $20 million for immediate remediation, delayed remediation, and no remediation, respectively. On the benefit side, DOE's analysis suggests that no cancer fatalities (among either the public or workers) should result from exposure to contaminants in the reactors during a period of 100 years. That is, no lives would be saved over the next 100 years by DOE's investment in remedial action, arguing for the cheapest alternative of no remediation.

Performing no remediation appears less attractive, however, if one believes that DOE might someday stop maintaining the reactors. In that case,

33. At a discount rate of 4 percent, the cost of delayed remediation would be about $20 million; at 7 percent, it would be about $7 million. DOE's undiscounted cost estimates for the two options involving remediation are very similar because the annual costs to monitor the quality of groundwater at the disposal site, which are incurred after immediate remediation, are approximately equal to the annual costs to guard and maintain the facilities before delayed remediation.

34. At a rate of 4 percent, the discounted cost would be about $10 million; at 7 percent, about $6 million.

35. The estimated dose from exposure to contaminants in reactors is much lower than the dose that would result from natural radiation. In fact, DOE estimates that the same population would receive a dose 200 times higher from natural radiation over the 10,000-year period than from contaminants in the reactors during the same period.

some fatalities might occur. Based on DOE's analysis, which assumes the reactors are abandoned after 100 years, 20 fatalities might result over 10,000 years without remediation, compared with one if remedial action was taken, either immediately or after 75 years (see Table 4).

Based in part on this reasoning, DOE has decided to undertake remedial action within 75 years.[36] DOE is currently working on the conceptual design and has not determined when removal of the reactors will begin.

Setting Priorities

Because DOE is responsible for cleaning up thousands of sites and because available resources will be constrained, the department, with guidance from the Congress and other interested parties, will have to make decisions about which cleanup tasks to tackle first and which to defer. To make the best use of limited budgetary resources, DOE must weigh the benefits and costs of various cleanup projects when establishing priorities among them. In other words, DOE should focus its attention on projects that would yield the greatest benefit--in terms of deaths averted or land and facilities returned to the public domain--per dollar invested.

But as noted throughout this chapter, the detailed information necessary to make such choices is often not available. In many cases, DOE does not know the nature or extent of contamination at its facilities, nor the health risks posed.

Additional Information Needed for Rational Decisionmaking

Thus, before DOE can make choices about how to clean up its complex, it will need additional information and tools. First, DOE must know the extent of the task it faces. To gain this knowledge, it must determine the type and extent of contaminants within its complex. DOE is in the process of characterizing its sites and will continue to do so for the next few years.

Second, once the extent of the contamination has been determined, DOE, in order to decide whether the problem requires remediation, must know what risk it poses to human health and the environment. Expanding the body of knowledge concerning health risks posed by pollutants is essential not only to DOE's cleanup program but also to environmental policy in general.

Next, DOE must have efficient and effective techniques to accomplish cleanup. As discussed in Chapter 4, this area might deserve added emphasis.

Finally, DOE needs standards for acceptable levels of contaminants, to indicate when cleanup tasks are complete. Such standards would be tied in part to the risks posed to human health, a question discussed above. An additional criterion for determining cleanup standards, however, is the ultimate use to which the facility or land will be put. If the land is going to be used for a park, it will have to be cleaned to pristine standards. But if it will be used as a national nuclear waste dump, then it will not have to be cleaned up at all. Thus, before DOE can make choices concerning how to conduct various cleanup projects, it will have to determine, in conjunction with the public and its representatives, the ultimate use of its surplus facilities.

Models for Setting Priorities

DOE has made a number of attempts to develop a process for setting priorities for its environmental activities. In consultation with state and local officials and other interested groups, DOE developed a model for setting priorities in the Environmental Restoration program that incorporated risks to human health, uncertainty, environmental impact, socioeconomic impact, regulatory commitments, and future costs. The Waste Management program has been working on a similar model.[37]

36. Department of Energy, "Record of Decision: Decommissioning of Eight Surplus Production Reactors at the Hanford Site, Richland, Washington," *Federal Register*, vol. 58, no. 178 (September 16, 1993), pp. 48509-48513.

37. For a thorough discussion of setting priorities, see Congressional Research Service, *Setting Priorities for Department of Energy Environmental Activities*, Report 91-150 ENR (February 6, 1991).

In the wake of substantial criticism, however, DOE seems to have abandoned these modeling efforts. For example, the environmental restoration model was used in developing the fiscal year 1992 budget request but was set aside during preparation of the 1993 budget. Critics have complained of a number of shortcomings, especially inadequate consultation with affected parties and the use of subjective weights on which there was considerable disagreement.[38] In reality, moreover, regulatory requirements have preempted the results of the model, since DOE has had to devote essentially all of its near-term resources to specific actions set forth in its agreements with the Environmental Protection Agency and state regulatory authorities.

Public Involvement in Setting Objectives and Priorities

DOE's experience with trying to develop a model to set priorities has underscored the importance of involving the public in the process. Consequently, DOE has stepped up efforts to increase public participation in establishing cleanup policies. The department is participating in an effort led by the Environmental Protection Agency and aimed at finding ways of improving communications between federal agencies responsible for cleaning up waste sites and interested individuals and groups. The Federal Facilities Environmental Restoration Dialogue Committee, also known as the Keystone group after its facilitators, the Keystone Center, includes representatives of federal agencies, tribal and state governments, and environmental, community, and labor organizations. The committee has recommended that federal agencies keep citizens informed about environmental cleanup plans and solicit their views about objectives and priorities.[39] DOE has indicated a willingness to adopt the Keystone group's recommendations to improve the lines of communication.[40]

The Keystone process is based at the facility level, not the national level, which has several advantages. First, people living near a facility are the ones who would most directly experience the effects of cleanup policies--effects such as reductions in risk, availability of facilities and land for other uses, changes in employment, and effects on transportation (especially if wastes are transported off-site). They also may bring valuable knowledge of the needs and preferences of the local community--its values and heritage as well as socioeconomic factors--which may vary from facility to facility.

In some communities in which DOE has been a major employer, residents largely support the decontamination of facilities to make them available for other government, industrial, or commercial use. Some people may consider keeping jobs and preserving the economic base of the community to be more important than removing every trace of contamination--at least in the near term. Others may consider it a moral obligation to future generations to restore expeditiously all lands to their pristine state. In particular, some DOE facilities are on lands considered sacred by Native Americans.

The Keystone group recognized that federal funding might fall short of the amount needed to meet legal requirements at federal facilities. It proposed that budget shortfalls be allocated on an equal percentage basis among all facilities. This approach points up a disadvantage of focusing on individual facilities in that national priorities may differ from local priorities. If one facility was found to pose much more serious risks than others,

38. For a detailed critique, see James D. Werner, "Comments on Behalf of the Natural Resources Defense Council and the Environmental Defense Fund Regarding the Proposed Department of Energy Priority System for Environmental Restoration" (Natural Resources Defense Council, Washington, D.C., November 21, 1991).

39. Federal Facilities Environmental Restoration Dialogue Committee, *Interim Report: Recommendations for Improving the Federal Facility Environmental Restoration Decision-Making Process and Setting Priorities in the Event of Funding Shortfalls* (February 1993).

40. Statement of Paul D. Grimm, then Acting Assistant Secretary of Energy for Environmental Restoration and Waste Management, before the Subcommittee on Energy and Water Development of the House Committee on Appropriations, April 26, 1993.

a broader perspective would probably favor shifting resources to it.[41]

Conclusion

Some people might argue that setting priorities beyond simply complying with regulations and agreements is unnecessary, or at least not productive, since compliance will take most of the resources DOE has available for the foreseeable future. Others worry that if DOE targets its efforts toward cleaning up the most severe problems first, it may lose the will or the resources to take care of smaller problems later. But any cleanup project uses resources that could be spent on some other activity, and society as a whole can gain the most by devoting those resources to activities that produce the most benefits.

Cleaning up all areas to pristine standards may be the ultimate goal desired by the public. But attaining that objective will be very expensive. Selectively reconsidering cleanup standards, and accepting some level of risk greater than zero, could substantially lower total costs. That could free public funds for other programs, such as environmental cleanup efforts deemed to be of higher priority than some of DOE's cleanup problems.

41. The additional resources could come from sources other than the DOE cleanup budget. But raising taxes or reducing federal spending on other services to pay for it would be more difficult, given the framework of the budget process.